

GUJARAT TECHNOLOGICAL UNIVERSITY

Pharm.D.

2nd year

Subject Name: Pathophysiology

Subject Code: 828801

Scope of the Subject: This course is designed to impart a thorough knowledge of the relevant aspects of pathology of various conditions with reference to its pharmacological applications, and understanding of basic Pathophysiological mechanisms. Hence it will not only help to study the syllabus of pathology, but also to get baseline knowledge of its application in other subject of pharmacy.

Objectives of the Subject: Upon completion of the subject student shall be able to –

- a. describe the etiology and pathogenesis of the selected disease states;
- b. name the signs and symptoms of the diseases; and
- c. mention the complications of the diseases.

Theory (3 Hours/ Week, Total: 90 Hours)

Teaching Scheme (Hours)				Evaluation Scheme (Marks)				Total marks
Theory	Tutorial	Practical	Total	Theory		Practical		
				External	Internal	External	Internal	
3	1	-	4	70	30	-	-	100

Sr. No.	Course Contents	Hours	Module Weightage
1	Basic principles of cell injury and Adaptation a) Causes, Pathogenesis and morphology of cell injury b) Abnormalities in lipoproteinaemia, glycogen infiltration and glycogen storage diseases	6	7%
2	Inflammation a) Pathogenesis of acute inflammation, Chemical mediators in inflammation, Types of chronic inflammation b) Repairs of wounds in the skin, factors influencing healing of wounds	6	7%
3	Diseases of Immunity a) Introduction to T and B cells b) MHC proteins or transplantation antigens c) Immune tolerance – Hypersensitivity – Hypersensitivity type I, II, III, IV, Biological significance, Allergy due to food, chemicals and drugs. – Autoimmunity Criteria for autoimmunity, Classifications of autoimmune diseases in man, mechanism of autoimmunity, Transplantation and immunologic tolerance, allograft rejections, transplantation antigens, mechanism of rejection of allograft. – Acquired immune deficiency syndrome (AIDS) – Amyloidosis	10	11%

4	Cancer: differences between benign and malignant tumors, Histological diagnosis of malignancy, invasions and metastasis, patterns of spread, disturbances of growth of cells, classification of tumors, general biology of tumors, spread of malignant tumors, etiology and pathogenesis of cancer.	9	10%
5	Types of shock, mechanisms, stages and management.	4	4%
6	Biological effects of radiation	3	3%
7	Environmental and nutritional diseases i) Air pollution and smoking- SO ₂ , NO, NO ₂ , and CO ii) Protein calorie malnutrition, vitamins, obesity, pathogenesis of starvation	7	8%
8	Pathophysiology of common diseases a. Parkinsonism b. Schizophrenia c. Depression and mania d. Hypertension, e. Stroke (ischaemic and hemorrhage) f. Angina, CCF, Atherosclerosis, Myocardial infarction g. Diabetes Mellitus h. Peptic ulcer and inflammatory bowel diseases i. Cirrhosis and Alcoholic liver diseases j. Acute and chronic renal failure k. Asthma and chronic obstructive airway diseases	25	28%
9	Infectious diseases: Sexually transmitted diseases (HIV, Syphilis, Gonorrhoea), Urinary tract infections, Pneumonia, Typhoid, Tuberculosis, Leprosy, Malaria Dysentery (bacterial and amoebic), Hepatitis- infective hepatitis.	20	22%

Course Materials:

Text books (Theory)

- Pathologic basis of disease by- Cotran, Kumar, Robbins, Latest Edition
- Text book of Pathology- Harsh Mohan, Latest Edition
- Text book of Pathology- Y.M. Bhide, Latest Edition

Reference books (Theory)

- Clinical Pharmacy and Therapeutics; Second edition; Roger Walker; Churchill Livingstone publication, Latest Edition

Assignments :

Topics of the assignment

- Chemical Mediators of inflammation
- Drug Hypersensitivity
- Cigarette smoking & its ill effects
- Biological Effects of Radiation
- Etiology and hazards of obesity
- Complications of diabetes
- Diagnosis of cancer
- Disorders of vitamins
- Methods in Pathology-Laboratory values of clinical significance

10. Pathophysiology of Dengue Hemorrhagic Fever (DHF)

Format of the assignment

1. Minimum & Maximum number of pages.
2. Reference(s) shall be included at the end.
3. Assignment can be a combined presentation at the end of the academic year
4. It shall be computer draft copy.
5. Name and signature of the student
6. Time allocated for presentation may be 8+2 Min

